

Application Number 10/057,574
Amendment dated October 11, 2005
Responsive to Office Action mailed July 8, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method comprising:
capturing network packets from a computing network using a plurality of agents coupled to the computing network;
selecting portions of the captured network data for use as replay data;
communicating the replay data to ~~a plurality of the~~ the agents coupled to ~~a the~~ the computing network, wherein the replay data includes one or more network packets; and
issuing commands to the agents to control introduction of the network packets on the computing network by the agents.

Claim 2 (Original): The method of claim 1, further comprising:
generating a set of triggers, wherein each trigger defines one or more conditions;
communicating the triggers to the agents;
receiving signals from the agents based on the conditions of the triggers; and
issuing the commands to the agents in response to the signals.

Claim 3 (Original): The method of claim 2, wherein issuing the commands to the agents in response to the signals comprises selectively directing one or more of the agents to introduce the network packets upon receiving the signals.

Claim 4 (Original): The method of claim 2, wherein generating a set of triggers comprises generating a set of triggers based on user input.

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Claim 5 (Original): The method of claim 1, wherein issuing commands comprises issuing start commands to the agents directing the agents to initiate introduction of the network packets on the computer network.

Claim 6 (Original): The method of claim 1, further comprising:
 associating portions of the replay data with respective agents;
 storing a replay scenario that defines a conditional flow for introduction of the portions of the replay data by the agents; and
 issuing the commands to the agents according to the replay scenario.

Claim 7 (Original): The method of claim 6, further comprising receiving input from the user defining the replay scenario.

Claim 8 (Original): The method of claim 6, wherein associating portions of the replay data with the respective agents comprises associating portions of the replay data with respective agents in response to input received from a user.

Claim 9 (Cancelled).

Claim 10 (Currently Amended): The method of claim 9 1, wherein selecting portions of the captured network data comprises selecting the portions in response to user input.

Claim 11 (Currently Amended): The method of claim 9 1, further comprising:
 communicating the captured network data to an aggregator;
 aggregating the captured network packets into sets of network packets based on source information and destination information for the network packets;
 presenting the aggregated network packets to a user; and
 selecting the portions ~~based~~ of the aggregated network packets to use as the replay data based on input from the user.

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Claim 12 (Original): The method of claim 11, wherein aggregating the captured network packets comprises:

- sorting the network packets based on timestamps of the network packets;
- assigning the network packets having equal source information and equal destination information to a common set; and
- identifying within the sets duplicate packets that were captured by different agents.

Claim 13 (Original): The method of claim 12, wherein sorting the network packets comprises determining an originating packet for the duplicate packets.

Claim 14 (Original): The method of claim 12, wherein identifying duplicate packets comprises:

- identifying network packets having equal sequence numbers and acknowledgement numbers; and
- performing a byte-by-byte comparison for payloads of the identified packets.

Claim 15 (Original): The method of claim 11, wherein the source information comprises one of a media access control (MAC) address and a Data Link Control (DLC) address for a source network device.

Claim 16 (Original): The method of claim 11, wherein the destination information comprises one of a media access control (MAC) address and a Data Link Control (DLC) address for a destination network device.

Claim 17 (Currently Amended): The method of claim 1, further comprising:

- modifying the replay data ~~based on user input~~; and
- communicating the modified replay data to agents.

Claim 18 (Original): The method of claim 17, further comprising modifying the replay data based on user input.

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Claim 19 (Original): The method of claim 17, further comprising introducing the respective network packets of the replay data with the agents.

Claim 20 (Original): The method of claim 19, wherein introducing the respective network packets comprises modifying sequence numbers and acknowledgement numbers of the packet to simulate authentic network activity.

Claim 21 (Original): A method comprising:

storing replay data that includes network packets and that defines a conditional flow for introduction of portions of the replay data by respective agents coupled to a computing network;
communicating portions of the replay data to the respective agents; and
issuing commands to the agents to control introduction of the network packets on the computing network by the agents.

Claim 22 (Currently Amended): The method of claim 21, further comprising:
receiving signals from the agents indicative of network events; and
issuing the commands to the agents in response to the signals and in accordance with the replay-scenario conditional flow.

Claim 23 (Currently Amended): The method of claim 21, further comprising:
generating a set of triggers, wherein each trigger defines one or more conditions;
communicating the triggers to the agents;
receiving signals from the agents based on the conditions of the triggers; and
issuing the commands to the agents in response to the signals and in accordance with the replay-scenario conditional flow.

Claim 24 (Original): The method of claim 23, wherein issuing the commands to the agents comprises selectively directing one or more of the agents to introduce the respective portions of the network packets upon receiving the signals.

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Claim 25 (Original): The method of claim 21, further comprising:
capturing network packets from the network using the agents; and
selecting portions of the captured network packets for use as the replay data.

Claim 26 (Currently Amended): The method of claim 25, wherein selecting portions of the captured network ~~portions~~ packets comprises selecting the portions in response to user input.

Claim 27 (Original): The method of claim 25, further comprising:
communicating the captured network data to an aggregator;
aggregating the captured network packets into sets of network packets based on source information and destination information for the network packets
presenting the aggregated network packets to a user; and
selecting the portions based of the aggregated network packets to use as the replay data based on input from the user.

Claim 28 (Original): The method of claim 27, wherein aggregating the captured network packets comprises:
sorting the network packets based on timestamps of the network packets;
assigning the network packets having equal source information and equal destination information to a common set; and
identifying within the sets duplicate packets that were captured by different agents.

Claim 29 (Currently Amended): A system comprising:
a plurality of distributed agents coupled to a computing network, wherein the agents capture network packets from the computing network; and
a replay module coupled to the network to select portions of the captured network data for use as replay data that includes one or more network packets, and communicate the replay data to the agents ~~replay data that includes one or more network packets~~, wherein the replay module issues commands to the agents to control introduction of the network packets on the computing network by the agents.

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Claim 30 (Original): The system of claim 29, further comprising a storage medium to store a set of triggers, wherein each trigger defines one or more conditions, and further wherein the replay agent:

communicates the triggers to the agents;
receives signals from the agents based on the conditions of the triggers; and
issues the commands to the agents in response to the signals.

Claim 31 (Original): The system of claim 30, wherein the replay module selectively directs one or more of the agents to introduce the respective network packets upon receiving the signals.

Claim 32 (Original): A system comprising:

a plurality of distributed agents coupled to a computing network;
a replay module coupled to the network having a storage medium to store replay data that includes network packets and defines a conditional flow for introduction of the replay data by the agents, wherein the replay module communicates portions of the replay data to the agents, and issues commands to the agents according to the conditional flow to control introduction of the network packets on the computing network by the agents.

Claim 33 (Currently Amended): The system of claim 32, further comprising a communication link coupling the agents to the replay module, wherein the replay module receives signals from the agents via the communication link indicative of network events, and further wherein the replay module issues the commands to the agents via the communication link in response to the signals and in accordance with the ~~replay scenario~~ conditional flow.

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Claim 34 (Currently Amended): The system of claim 32, wherein the storage medium stores a set of triggers, wherein each trigger defines one or more conditions, and further wherein the replay module:

- communicates the triggers to the agents; and
- receives signals from the agents based on the conditions of the triggers; and
- issues the commands to the agents in response to the signals and in accordance with the replay scenario conditional flow.

Claim 35 (Original): The system of claim 32, further comprising an aggregation module coupled to the network to receive packets captured from the network by the agents.

Claim 36 (Original): The system of claim 35, wherein the aggregation module aggregates the captured network packets into sets of network packets based on source information and destination information for the network packets.

Claim 37 (Original): The system of claim 36, further comprising a user interface to present the aggregated network packets to a user, and to select portions of the aggregated network packets to use as the replay data based on input from the user.

Claim 38 (Original): The system of claim 37, wherein the aggregation module identifies duplicate packets that were captured by different agents, and presents the non-duplicate network packets on the user interface.

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Claim 39 (Currently Amended): A medium comprising instructions to cause a processor to:

direct a plurality of agents coupled to a computing network to capture network packets from the computing network;

communicate the captured network data to an aggregator;

aggregate the captured network packets into sets of network packets based on source information and destination information for the network packets;

present the aggregated network packets to a user;

select portions of the aggregated network packets to use as replay data based on input from the user;

communicate the replay data to a plurality of the agents coupled to a the computing network, wherein the replay data includes one or more network packets; and

issue commands to the agents to control introduction of the network packets on the computing network by the agents.

Claim 40 (Original): The medium of claim 39, further comprising instructions to cause the processor to:

generate a set of triggers, wherein each trigger defines one or more conditions;

communicate the triggers to the agents;

receive signals from the agents based on the conditions of the triggers; and

issue the commands to the agents in response to the signals.

Claim 41 (Currently Amended): The medium of claim 40, wherein the instructions cause the processor to selectively direct one or more of the agents to introduce the respective network packets upon receiving the signals.

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Claim 42 (Currently Amended): The medium of claim 39, wherein the instructions cause the processor to:

associate portions of the replay data with respective agents;
store a replay scenario that defines a conditional flow for introduction of the portions of the replay data by the agents; and
issue the commands to the agents according to the replay scenario.

Claim 43 (Cancelled).

Claim 44 (Cancelled).

Claim 45 (Currently Amended): The medium of claim ~~[[44]]~~ 39, further comprising instructions to cause the processor to sort the network packets based on timestamps of the network packets, assign the network packets having equal source information and equal destination information to a common set, and identify within the sets duplicate packets that were captured by different agents.